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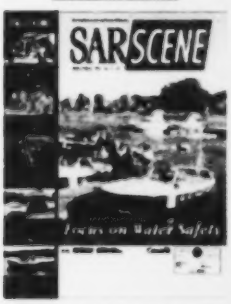

Volume 12, number 2
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NEW SAR INITIATIVES

New SAR Initiatives Fund (NIF)

Final Reports

Fiscal Year 1996-97

About the New SAR Initiatives Fund (NIF)

The New SAR Initiatives Fund (NIF), was established by the federal government in 1988, and is managed by the National Search and Rescue Secretariat (NSS), on behalf of the Lead Minister for Search and Rescue.

NIF provides annual funding for new projects (or initiatives), that will improve the National Search and Rescue Program. NIF projects are funded in six priority areas: further integration of the NSP; development of SAR data and information; prevention; research and development; volunteers; and response. All of the proposals for these projects are carefully reviewed and ranked in order of merit. The annual funding for these projects is then distributed in that order of priority.

This report summarizes the NIF projects that received funding from the NSS, and were completed during the fiscal year 1996/97.

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- Ground and Water SAR Videos
- Essentials for Safe Paddling
- Avalanche Accidents in Canada - Volume IV
- Sledsmart
- Marine Rescue Training - QC Riverfront Municipality*

Department of Fisheries and Oceans

- SAR Equipment 21 CCG Helicopters*
- Laurentides VHF-DF

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- Remote Sensing Ocean Currents
- Cottage Country Safe Boating Special
- Leeway of Common SAR Objects- Phase IV
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- Eagle NVGs for SAR Techs*
- RCC Command and Control Information Systems
- SAR Satellite Communications (SATCOM)
- SAR Tech Hand Held Radio
- Data Flag/Hail System SAR Aircraft
- Wide Area Coverage Infrared Surveillance System (WACISS)
- Multispectral Satellite Imagery for Search and Rescue
- RCC Command and Control Information Systems
- VHF Base Radio Stations for CASARA
- Portable Oxygen System for CASARA
- Pulse Oximetry Monitor
- CH124 Hoisting Communications
- Life Vest PFD for CASARA

Environment Canada

- Quebec Pilots Weather Education Course
- Avalanche Weather Training Course
- Analysis of Aircraft Icing from Freezing Precipitation
- Improved Aircraft Icing Forecasts From Model and Satellite Data
- Education/Awareness Program NWT*
- Electronic Marine Weather Signs - Great Lakes*
- Operational Surface Current Forecast*
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- Marine Weather Warning for Quebec Boaters*
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National Search and Rescue Secretariat

- Strategic Needs Review of the NIF

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- Integrated Search Management System
- SAR Prevention for Children
- Ground SAR Teams- PEI
- Gas Powered Generators
- Land SAR System in Canada: Roles, Responsibilities, and Organization
- Mobile Satellite Communications
- Training Videos*
- Lost Person Behaviour Study*

Transport Canada

- Sky High, Through the Overcast

*Report not available

Conclusion

The New SAR Initiatives Fund, as a whole, has linked together many groups of people including: the Federal Government, the Provincial/Territorial Government, Non-Federal organizations, Volunteers, and Others, in an effort to increase SAR capabilities in Canada.

During the fiscal year of 1996/97, many Research and Development, Prevention, Volunteer, and Response projects were funded. The projects ranged from large to small, and from single to multi year, but all of them have contributed to improving the search and rescue capabilities in Canada. The NSS receives many proposals, and funds those of the highest priority. Unfortunately, funds are not available to finance all of the proposals received. The National Search and Rescue Secretariat welcomes re-submission of worthy projects which did not receive funding and new ideas on future proposals.

The National Search and Rescue Secretariat would like thank those who have participated in the program. NIF has had many successes in the past and we trust that, with your help, it will continue to do so in the future, so '*that others may live*'.

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Date Modified: 2002-09-27

Important Notices

New SAR Initiatives Fund
(NIF)
Final Reports
Fiscal Year 1996-97

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103-05290/

Department of Canadian Heritage

New SAR Initiatives Fund
Final Summary Report

NIFID #: 94005
Project #: CPS 5/94
Category: Prevention

Self-Reliance Situational Analysis and Communications Plan

This project was sponsored by the Department of Canadian Heritage, and received funding through the New SAR Initiatives Fund (NIF) in fiscal years 1994/95, 1995/96, and 1996/97.

The original objective of this project was modified to focus on the development of a long term self reliance strategy that will be geared to potential and current participants in outdoor recreation activities, as opposed to national park visitors.

Research and analysis in the field of self-reliance, social marketing, communications and behaviour change was completed to find out how other sectors, like the health sector, can adapt to self-reliance communications. The results of the studies were used to form the basis of a three day workshop, held in Banff. This workshop formed a team of experts to assist in the development of the self-reliance communications plan to encourage people to engage in self reliant behaviour.

This project created a more defined direction for a Public Safety Communications Program, with emphasis on Parks Canada, for the next five years. The final products of the project will be a background report (situation analysis) and a report outlining the long term self reliance strategy targeted at specific outdoor recreation participants.

Bibliographical References

Situation Analysis to Guide the Production and Delivery of National Self-reliance Communication Products, Ashley Consulting for Parks Canada, March, 1997.

Public Safety Communication Plan, Parks Canada, March, 1997.

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New SAR Initiatives Fund
Final Summary Report

NIFID #: 95017
Project #: CPS 2/95
Category: R&D

Ground and Water SAR Videos

This project was sponsored by the department of Canadian Heritage and received funding through the New SAR Initiatives Fund (NIF) in fiscal years 1995/96 and 1996/97.

The objective of this project was to produce videos to use as training material for ground and marine SAR, with a view to improving training for Parks Canada and the Canadian Coast Guard staff. The 18 minute videos show the techniques and procedures to use in more common marine emergency situations. These videos were distributed to Parks Canada, the Canadian Coast Guard, and the National Search and Rescue Secretariat. The ground SAR video project was cancelled because of a similar project in Alberta.

Bibliographical References

Marine Search and Rescue. (18 min. video)

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New SAR Initiatives Fund
Final Summary Report

NIFID #: 96003
Project #: CH 1/96
Category: Prevention

Essentials for Safe Paddling

This project was sponsored by Canadian Heritage and received funding through the New SAR Initiatives Fund (NIF) in fiscal year 1996/97.

The objective of this project was to develop a brochure, a poster, TV and radio public service announcements, and an Internet World Wide Web site, targeting paddlers to increase awareness of safety regulations and procedures. It was a media campaign to get people to think about prevention before they enter the water, and to think about self rescue while in the water. It was also aimed at promoting volunteers.

Postage paid reply cards were produced so that people could obtain information about paddling safety, by simply mailing in the card. This was an inexpensive way to inform the target audience about paddling safety.

The posters that were produced were distributed to various outlets, all of which would be visited by individuals involved water activities, including canoe and kayak rental shops, RCMP outposts, and outdoor stores.

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New SAR Initiatives Fund
Final Summary Report

NIFID #: 96004
Project #: CH 2/96
Category: Prevention

Avalanche Accidents in Canada - Volume IV

This project was sponsored by Canadian Heritage and received funding through the New SAR Initiatives Fund (NIF) in fiscal year 1996/97.

The objective of this project was to produce a book that would educate those interested in minimizing avalanche risks. The book gives a detailed analysis of eighty-nine avalanche incidents from the years 1984 to 1996. There are photographs and statistical analyses of the trends and patterns in avalanche accidents with graphs and charts and conclusions for the reader.

Since its publication in 1997, the book has sold 5,541 copies, and is being distributed in a Canada and the USA. Copies have also been sent to the major avalanche libraries.

The major benefit of this project is believed to be a reduction of industrial-related avalanche accidents. The number of avalanche fatalities have been much less in ratio to the increased number of avalanche terrain users, and the contribution of Volume IV is probably a partial cause of this.

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New SAR Initiatives Program
Final Summary Report

NIFID #: 96006
Project #: CH 4/96
Category: Prevention

Sledsmart

This project was sponsored by the Department of Canadian Heritage and received funding through the New SAR Initiatives Fund (NIF) in fiscal year 1996/97.

The objectives of this project were to reduce the number of snowmobile related fatalities and injuries caused by breaking through ice, and to teach the responsible use of snowmobiles.

This project involved traveling throughout the province of Newfoundland and Labrador and delivering snowmobile safety education. The focus was on "preparing for the unexpected". The motto was "stay off, or prepare to go through". This project created an increased interest in snowmobile safety in local communities.

The "Sledsmart" project was a positive experience for all those involved. Feedback on the positive effect this program has had on the target groups continues.

The Newfoundland and Labrador "Sledsmart" program provided a way to communicate to individuals involved in snowmobiling within the area. Stakeholders, clubs, agencies and law enforcement also helped to make safety information even more available.

Bibliography References

- "Newfoundland and Labrador Sledsmart Snowmobile Safety Education"manual, Lifesaving Society, 1996.
- "Snowmobiling on Ice-covered Bodies of Water" pamphlet, Lifesaving Society, 1996.

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Department of Fisheries and Oceans

New SAR Initiatives Fund
Final Summary Report

NIFID #: 92071
Project #: TC 10/92
Category: Response

Laurentides VHF-DF

This project was sponsored by the Canadian Coast Guard and received funding through the New SAR Initiatives Fund (NIF) in fiscal years 1992/93, 1993/94, 1994/95, and 1995/96.

The purpose of this project was to install a network of sites supplied with Very High Frequency - Direction Finder (VHF-DF) equipment for Search and Rescue activities. Equipment was installed in Montmagny, Grosse-Roche, Havre St-Pierre, Newport, Mont-Louis, Lac-D'Aigle, Heath-Pointe, Natashquan, and Rivière du Loup. These sites and equipment allow for the fast, accurate and precise positioning of vessels in distress. This will help SAR to save more lives in less time.

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New SAR Initiatives Fund
Final Summary Report

NIFID #: 94045
Project #: TC 8/94
Category: Response

Easily Recovered Liferafts

This project was sponsored by the Canadian Coast Guard, and received funding through the New SAR Initiatives Fund (NIF) in fiscal years 1994/95 and 1995/96.

This project had three objectives: to develop design modification options to facilitate retrieval of a fully loaded, 20 person liferaft by a stand-by rescue vessel in high sea states; to develop appropriate design standards and performance criteria suitable for the development or revision of current liferaft requirements; and to fabricate and evaluate a prototype system in full scale trials.

This new system is beneficial because it involves very little modification to existing standard liferafts and probably no modifications to a typical SAR vessel. The new system compares favorably with a rescue by a Fast Recovery Craft (FRC) in which personnel are transferred to the FRC at sea from the liferaft. When the occupants are incapacitated, time is critical, or seas are very high, the proposed system would be superior to the existing FRC recovery.

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New SAR Initiatives Fund
Final Summary Report

NIFID#: 94053
Project #: TC 16/94
Category: Response

Radar Processing for Vessels

This project was sponsored by the Canadian Coast Guard and received funding through the New SAR Initiatives Fund (NIF) in fiscal years 1994/95 and 1995/96.

The purpose of this project was to test radar processing techniques for standard marine shipboard radars. This technique would improve the small target detection capability of the radars in reduced visibility and high clutter conditions.

The radar data that was used for this project was collected during a previous project titled "Target Detection Experiment". The availability of a reliable and accurate technology that will provide sufficient and consistent detection ranges in bad weather, will markedly improve search and rescue operations and increase the chances of survival for victims of marine casualties.

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New SAR Initiatives Fund
Final Summary Report

NIFID #: 94059
Project #: TC 20/94
Category: Response

Remote Sensing Ocean Currents

This project was sponsored by the Canadian Coast Guard and received funding through the New SAR Initiatives Fund (NIF) in fiscal years 1994/95 and 1995/96.

The overall objective of this project was to improve search effectiveness by predicting search object's drift. This would be accomplished by looking at sea current remote sensing of environmental parameter techniques in the Canadian Search and Rescue Program (CANSARP).

This project analyzed data for remote sensing environmental parameters. This data was collected from a variety of sources, such as the Water Drift Vector Study that discussed the relative merits of systems for SAR planning and cost-benefit analysis of each system.

The study was valuable for the Department of Fisheries and Oceans' (DFO) research and development program and for future studies and technologies. The development of the ocean features workstation, a DFO initiative, will be a valuable tool in the future.

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New SAR Initiatives Fund
Final Summary Report

NIFID #: 95020
Project #: TC 9/95
Category: Prevention

Cottage Country Safe Boating Special

This project was sponsored by the Canadian Coast Guard and received funding through the New SAR Initiatives Fund (NIF) in fiscal year 1995/96.

The objective of this project was to provide televised safe boating information to boaters, in this instance cottagers, who are not usually a primary target audience for SAR prevention information.

This project funded an episode of Cottage Country devoted to boating safety.

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New SAR Initiatives Fund
Final Summary Report

NIFID #: 93026
Project #: TC 11/95
Category: R&D

Leeway of Common SAR Objects- Phase IV

This project was sponsored by the Canadian Coast Guard, and received funding through the New SAR Initiatives Fund (NIF) in fiscal year 1996/97.

The objective of this project was to increase the understanding of leeway mechanics for drifting of different sized objects, such as small boats. This should increase the effectiveness of location prediction and ultimately decrease the amount of time allocated to searching for the vessel in distress.

A self-contained Acoustic Doppler Current Profiler, and two used S4 InterOceans Electromagnetic Current Meters were acquired for this project. The information gathered from this study is being used for the benefit of both the Canadian Coast Guard, and the United States Coast Guard.

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New SAR Initiatives Fund
Final Summary Report

NIFID #: 95024
Project #: DFO 1/95
Category: R&D

Laboratory Test on EPIRB Batteries

This project was sponsored by the Department of Fisheries and Oceans and received funding through the New SAR Initiatives Fund (NIF) in fiscal year 1995/96.

The purpose of this project was to investigate issues related to the reliability of Emergency Position Indicating Radio Beacon (EPIRB) batteries. Laboratory investigation tests were performed on the operating temperature range, using typical operating conditions of battery usage. Non-destructive tests were done to determine if the remaining battery life could be reliably determined.

The investigations led to the conclusion that there is a need for improved reliability of EPIRB batteries, and that there are simple, cost-effective actions that can be taken to enhance their performance, safety and overall reliability.

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New SAR Initiatives Fund
Final Summary Report

NIFID #: 96011
Project #: DFO 4/96
Category: Prevention

Weather Network Safety Broadcast

This prevention project was sponsored by the Department of Fisheries and Oceans and received funding through the New SAR Initiatives Fund (NIF) in fiscal year 1996/97.

The purpose of this project was to provide safety information to boaters before they head out onto the water. Twenty six individual television safety segments were produced in English and in French, and were broadcasted on Weather Network and MétéoMédia in 1996 and 1997.

Televising safety information provided an opportunity to reach a diverse population. The information provided will reduce the number of accidents caused by lack of awareness of basic safety practices and help to reduce the cost of search and rescue response.

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New SAR Initiatives Fund
Final Summary Report

NIFID #: 96013
Project #: DFO 6/96
Category: Prevention

Celebrity Classic Bass Safety Special

This project was sponsored by the Department of Fisheries and Oceans and received funding through the New SAR Initiatives Fund (NIF) in fiscal year 1996/97.

The objective of this project was to provide safety information to small vessel operators. "The Pro-Angler Guide to Safe Fishing", a thirty minute safety video hosted by a well known fishing personality and a professional hockey player, was produced to relay the information. The video was broadcast on The Sports Network (TSN). Program promotions were produced to advertise the broadcast of the Safe Fishing Show.

Safe boating messages with the NHL hockey player were also produced to be aired during the Celebrity Classic Bass Tournament. This tournament brought together 25 anglers and 25 hockey players together and attracted a broad television audience. Safety messages broadcast during the tournament reached large numbers of potential SAR victims.

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New SAR Initiatives Fund
Final Summary Report

NIFID #: 96018
Project #: DFO 11/96
Category: Response

SAR Development Conferences - Baffin Region

This response project was sponsored by the Department of Fisheries and Oceans and received funding through the New SAR Initiatives Fund (NIF) in fiscal year 1996/97.

The purpose of this project was to enhance understanding of the SAR roles and responsibilities of all the federal and territorial agencies in the NWT. This will help communities establish a response system for missing persons.

Delegates from the Kitikmeot Region community were selected to attend a conference to discuss SAR roles and responsibilities with officials from federal SAR delivery departments and provincial emergency measures organizations. The feedback that was received from the SAR agencies and the community was valuable. The delegates acquired a better understanding of SAR in the Kitikmeot Region, and a better understanding of the factors that affect SAR activities.

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Department of National Defence

New SAR Initiatives Fund
Final Summary Report

NIFID #: 93007
Project #: DND 1/93
Category: Response

RCC Command and Control Information Systems

This project was sponsored by the Department of National Defence, and received funding through the New SAR Initiatives Fund (NIF) in fiscal years 1993/94, 1994/95, 1995/96 and 1996/97.

The objective of this project was to upgrade the operational computer systems of the three Rescue Coordination Centers (RCCs), two Marine Rescue Sub-Centers (MRSCs) and the controller training facility located at the Coast Guard College in Sydney, Nova Scotia so that the controllers could more efficiently carry out their coordination and control functions. The new system will improve SAR response and reduce SAR costs by providing accurate detection, timely assessment and efficient use of all available resources. This system provides an automated method of collecting SAR data which is required at the local, regional and national level for SAR analysis and administration.

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New SAR Initiatives Program
Final Summary Report

NIFID#: 90012
Project #: DND 2/90
Category: R&D

SAR Satellite Communications (SATCOM)

This project was sponsored by the Department of National Defence and received funding through the New SAR Initiatives Fund (NIF) in fiscal year 1990/91.

The objectives of this project were to investigate Satellite Communications (SATCOM) for primary Search and Rescue aircraft which would provide reliable long-range communication for RCC command and control of aircraft; and reliable long range communication to link SAR Techs to ground-based emergency expertise.

The project was conducted in two phases: a SATCOM Feasibility Study of systems currently available on the market identified the Inmarsat system as being optimal; and an installation and feasibility study evaluated possible configurations for a SATCOM installation on a CC130. A RACAL Satfone and CAL AMT-100 were selected and provided to DND on a six month loan.

CC130 SAR crews were able to effectively communicate with various agencies when traditional lines of communication such as HF were unusable. Some shortcomings, such as occasional difficulty placing calls due to congestion on the INMARSAT system, were identified.

The findings from this project are being used to define future SATCOM requirements for SAR fleets. As SATCOM technology evolves and more systems become available, the lessons learned during this trial will be applied to ensure an efficient and cost-effective SATCOM system is chosen.

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New SAR Initiatives Program
Final Summary Report

NIFID#: 92040
Project# : DND 4/92
Category: Response

SAR Tech Hand Held Radio

This project was sponsored by the Department of National Defence and received funding through the New SAR Initiatives Fund (NIF) in fiscal year 1992//93.

The objectives of this project were to provide SAR Techs with a rugged, hand-held/hands-free radio communication system operating on the FM frequency and to develop a battery capable of operating the radio at low temperatures (- 30° C).

Three separate radios were trialed in 1993 by the SAR Community and the Motorola Saber 1R Radio was deemed most suitable. 110 voice-activated radios with nickel cadmium battery, chargers and all associated accessories were purchased and delivered to SAR Units. Other spare radios were purchased and sent to DND supply. The cold weather battery was developed and passed all requirements (current capacity at –30°C , vibration, shock, altitude, decompression, thermal shock, salt water immersion and battery venting). In April 1997, 300 batteries were purchased with 110 delivered to SAR Squadrons and the remainder to DND supply for spares.

SAR Techs now have an effective method of communicating with military search airplanes, Canadian Coast Guard, commercial vessels, police and other search and rescue organizations. The radio should also provide hours of operation in harsh Arctic conditions. SAR Mission Reports will continue to be monitored to ensure the effectiveness of the cold weather battery.

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New SAR Initiatives Program
Final Summary Report

NIF ID: 92029
Project #: DND 6/92
Category: Response

Data Flag/Hail System SAR Aircraft

This project was sponsored by the Department of National Defence and received funding through the New SAR Initiatives Fund (NIF) in fiscal year 1992/93.

The Datahail system was designed to automatically transmit position reports and communicate (through an HF radio) to Rescue Coordination Centres and to the Canadian Coast Guard. The Datahail system was trialed on a SAR aircraft to assess its operational SAR suitability to automatically provide Real-time position information to the RCC; to communicate with RCC by hardcopy message; and to provide flight-following capability in sparsely settled areas.

Equipment was purchased and trialed on the CC130 and CH113 aircraft located in Greenwood, Nova Scotia. Although the Datahail system did not meet the requirements of SAR aircrew, its use did help to define the requirements for future systems.

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New SAR Initiatives Program
Final Summary Report

NIFID#: 92043
Project #: DND 7/92
Category: R&D

Wide Area Coverage Infrared Surveillance System (WACISS)

This project was sponsored by the Department of National Defence and received funding through the New SAR Initiatives Fund (NIF) in fiscal year 1992/93.

This project simulated the human eye in the Infrared (IR) by integrating two sensors called Focal Plane Arrays (FPA) in order to optimize this technology for use as a search tool by SAR personnel. The project encompassed the integration of two FPAs, one with a wide Field of View (FOV), for optimum sensitivity, and one with a narrow FOV, for maximum resolution.

This project has benefitted the R&D into search and rescue remote sensing and has the potential of increasing the chance of detecting rescue targets in cluttered scenery. Due to size constraints, the system is only operational in the laboratory, but it will be miniaturized and demonstrated outside of the laboratory, mounted in an aircraft.

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New SAR Initiatives Program
Final Summary Report

NIFID#: 92047
Project #: DND 12/92
Category: R&D

Multispectral Satellite Imagery for Search and Rescue

This project was sponsored by the Department of National Defence and received funding through the New SAR Initiatives Fund (NIF) in fiscal year 1992/93.

The objective of this project was to investigate the potential for satellite imagery to assist in search and rescue operations. Target enhancement was also to be studied, with special emphasis on the NIR region of the spectrum.

Work was based on satellite imagery, target enhancement and pattern recognition. The capabilities of ERS-1, SPOT, JERS-1, Landsat and RADARSAT to detect small optical and radar targets in a variety of patterns, as well as aircraft and ships at various locations, were investigated. Different image processing techniques and target enhancement were tried and refined. Pattern recognition research using artificial neural networks to detect spatial patterns in noisy imagery was also accomplished.

This project will eventually reduce detection time and its utility will be realized when satellite imagery is used to detect a crash site which was not readily found by conventional means. The knowledge gained in this project can also be transferred to any number of satellites.

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New SAR Initiatives Fund
Final Summary Report

NIFID #: 93007
Project #: DND 1/93
Category: Response

RCC Command and Control Information Systems

This project was sponsored by the Department of National Defence, and received funding through the New SAR Initiatives Fund (NIF) in fiscal years 1993/94, 1994/95, 1995/96 and 1996/97.

The objective of this project was to upgrade the operational computer systems of the three Rescue Coordination Centers (RCCs), two Marine Rescue Sub-Centers (MRSCs) and the controller training facility located at the Coast Guard College in Sydney, Nova Scotia so that the controllers could more efficiently carry out their coordination and control functions. The new system will improve SAR response and reduce SAR costs by providing accurate detection, timely assessment and efficient use of all available resources. This system provides an automated method of collecting SAR data which is required at the local, regional and national level for SAR analysis and administration.

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New SAR Initiatives Program
Final Summary Report

NIFID#: 96031
Project #: DND 6/96
Category: Response

VHF Base Radio Stations for CASARA

This project was sponsored by the Department of National Defence and received funding through the New SAR Initiatives Fund (NIF) in fiscal year 1996/97.

Sixteen (16) VHF base radio stations were purchased to satisfy safety and operational requirements for communications relay between CASARA aircraft and a ground station, where alternate sources are not available, for relay to RCC or Zone Headquarters.

CASARA can now pass timely reports to the RCC. Also, CASARA aircraft are now able to get much needed weather reports from other sources.

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New SAR Initiatives Program
Final Summary Report

NIFID#: 96028
Project # : 3/96
Category: Response

Portable Oxygen System for CASARA

This project was sponsored by the Department of National Defence and received funding through the New SAR Initiatives Fund (NIF) in fiscal year 1996/97.

Twelve portable, four place oxygen systems were purchased so that CASARA could perform regular searches or ELT homings in mountainous areas (above 10,000 feet).

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New SAR Initiatives Program
Final Summary Report

NIFID#: 96029
Project #: DND 4/96
Category: Response

Pulse Oximetry Monitor

This project was sponsored by the Department of National Defence and received funding through the New SAR Initiatives Fund (NIF) in fiscal year 1996/97.

This project provided SAR Techs with a diagnostic tool to monitor and record patient blood oxygen levels and act as a warning device to alert the rescuer to more serious medical problems related to body system(s) breakdown.

Sixty-one (61) compact, portable units with memory recall were purchased and are now in use at all SAR squadrons, the Canadian Forces School of Search and Rescue (Comox) and the Canadian Forces School of Aeromedical Training (Winnipeg).

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New SAR Initiatives Program
Final Summary Report

NIFID#: 96035
Project #: DND 10/96
Category: Response

CH124 Hoisting Communications

This project was sponsored by the Department of National Defence and received funding through the New SAR Initiatives Fund (NIF) in fiscal year 1996/97.

Sea King aircrew need to be able to communicate between the aircraft and the crew-member on the hoist or on the scene during SAR operations. Various communications systems were considered for this project, and the Helicopter Operational Test and Evaluation Facility (HOTEF) recommended the Motorola SABER 1 ruggedized hand-held radio. Thirty radios and the accompanying support equipment were purchased and delivered and the systems are now operational in the Maritime Helicopter community. Hoisting is now more efficient and risk to the aircrew reduced.

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New SAR Initiatives Program
Final Summary Report

NIFID#: 96037
Project # : DND 12/96
Category: Response

Life Vest PFD for CASARA

This project was sponsored by the Department of National Defence and received funding through the New SAR Initiatives Fund (NIF) in fiscal year 1996/97.

Two hundred (200) Personal Floatation Devices (PFDs) were purchased and distributed to CASARA members across Canada. The suits allows them to perform SAR missions and training exercises over water.

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Environment Canada

New SAR Initiatives Fund
Final Summary Report

NIFID #: 94029
Project #: EC 7/94
Category: Prevention

Quebec Pilots Weather Education Course

This project was sponsored by Environment Canada and received funding through the New SAR Initiatives Fund (NIF) in fiscal years 1994/95 and 1995/96.

The purpose of this project was to increase the number of Quebec pilots trained in meteorology through the Atmospheric Environment Service (AES) pilot course "MetAvi". AES has trained 10 percent (350) of Quebec pilots and the objective was to bring this number to 25 percent (900). To accomplish this, 35 24-hour courses were given to pilots at various flying schools in Quebec. These courses provided a manual and a video. These courses also taught the new international code METAR/TAFOR adopted by Canada, increasing the safety margin of pilots.

The implementation of this project will increase awareness of weather safety issues among the pilot population. This will result in a reduced number of meteorologically related accidents, an increase in the amount of lives that are being saved, and a decrease in costs. Three hundred and seventy (370) pilots took the course prior to March, 1997.

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New SAR Initiatives Fund
Final Summary Report

NIFID #: 94033
Project #: EC 11/94
Category: Prevention

Avalanche Weather Training Course

This project was sponsored by Environment Canada and received funding through the New SAR Initiatives Fund (NIF) in fiscal years 1994/95 and 1995/96.

This project provided Snow Avalanche Safety Personnel (including emergency preparedness agencies, provincial highways agencies, National and Provincial Parks, helicopter-skiing and ski resort operators) with the required detailed knowledge of meteorological processes in order to effectively carry out their professional duties. These duties included the primary tasks of risk management and hazard avoidance. Successful risk management of avalanche hazards has direct impact on the safety of the public at large (safe travel corridors through avalanche terrain); and significantly reduces expenditures of scarce SAR resources (search and recovery of avalanche victims is extremely time-sensitive, costly, and potentially hazardous to rescuers).

In the winter of 1997/97, nine courses were given to about 200 snow avalanche professionals in eight communities (Pacific and Yukon Region). Each course participant received a copy of the training document, in addition to a full-day interactive lecture on theoretical meteorology.

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New SAR Initiatives Program
Final Summary Report

NIFID#: 95010
Project #: EC 1/95
Category: R&D

Analysis of Aircraft Icing from Freezing Precipitation

This project was sponsored by Environment Canada and received funding through the New SAR Initiatives Fund (NIF), in fiscal years 1995/96, 1996/97 and 1997/98.

Atmospheric Environment Service received funding to conduct research into aircraft icing associated with freezing precipitation. Objectives of the research included: research, documentation, development, and analysis of freezing precipitation data.

The benefits of this research include:

- The development of an Aircraft Icing Forecast Model that can provide more accurate forecasts for the aviation industry;
- The creation of summaries of climatologies for several regions of Canada that will help develop future techniques for forecasting freezing precipitation;
- The development of more accurate analysis and interpretation techniques; and
- An invitation for AES representatives to sit on several FAA and Transport Canada committees dealing with aircraft icing and the aftermath of the ATR - 42 crash in Roselawn. The results of the SAR sponsored research will be used to develop advisory material for pilots, air carriers, and aircraft manufacturers.

In the last five years, the threat posed by freezing precipitation has become well known to the aviation industry. Several countries are involved in research projects to characterize the icing environment, and determine forecast techniques for accurately predicting freezing precipitation. Environment Canada is continuing to expand its knowledge, and has proposed continuing the research in the Great Lakes region with a follow-up field project. This is a natural extension of the St. John's, NF project.

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New SAR Initiatives Program
Final Summary Report

NIFID#: 95012
Project #: EC 3/95
Category: R&D

Improved Aircraft Icing Forecasts From Model and Satellite Data

This project was sponsored by Environment Canada, and received funding through the New SAR Initiatives Fund (NIF) in fiscal year 1995/96.

The purpose of this project was to conduct research associated with forecasting aircraft icing for two main reasons:

1) To develop a second generation aircraft forecasting scheme that would distinguish between ice and water, to incorporate into the existing operational forecast model; and
2) To compare the new icing forecast with aircraft and satellite measurements in order to access its capabilities and determine its usefulness.

The development of the second generation forecast model has continued from 1993 to 1996. The new model was tested against the first generation model, and completely replaced the first generation scheme in 1997. Two journal papers and several conference papers have been published describing the physics of the forecast model.

The SSM/I satellite was found to be a useful tool for icing forecast validation for finding potential icing regions over oceanic regions, but not for identifying the heaviest icing regions. Several conference papers were published detailing these results.

The development of the second generation aircraft icing forecast model represents a significant benefit to the aviation industry. All pilots require a weather briefing prior to filing a flight plan, and accurate icing forecasts are a critical safety concern when planning a flight. The second generation icing forecast model is more accurate than the first generation forecast model.

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National Search and Rescue Secretariat

New SAR Initiatives Fund
Final Summary Report

NIFID #: 96046
Project #: NSS 2/96
Category: Review

Strategic Needs Review of the NIF

This National Search and Rescue Secretariat project received funding through the New SAR Initiatives Fund (NIF) in fiscal year 1996/97.

A portion of the NIF is reserved on an annual basis for audit and evaluation of NIF projects.

In fiscal year 1996/97, review of the NIF took the form of assisting and advising ICSAR and its Sub-committees with implementing a key recommendation from the 1995/96 NIF Effectiveness Review. Development of strategic needs was seen in the NIF 95/96 Effectiveness Review as an important and required element in overall management of the NIF, particularly in setting future funding priorities.

The Strategic Needs were developed and accepted by NSS and ICSAR and are in the process of being included in the NIF Policy Guide. The review also helped to: identify the problem areas in the national SAR community, give a clear overall picture of SAR in Canada, and enable the federal government to prioritize the actions that are necessary to make SAR a more effective organization.

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Royal Canadian Mounted Police

New SAR Initiatives Fund
Final Summary Report

NIFID #: 95015 17
PROJECT #: RCMP 6/95

Training Videos (Revised: July 23/99)

~~Integrated Search Management System~~ 4 in italics

This **volunteer** project was sponsored by the Royal Canadian Mounted Police, and received funding through the New SAR Initiatives Fund (NIF) in fiscal years 1995/96 and 1996/97.

The objective of this project was to create a training resource package that can be used to train RCMP, volunteer search organizations and other SAR organizations in the principles and procedures of effective ground search management.

The training kit was produced by Spectra Communications Inc. of Vancouver. Videos were produced, which dramatized missing persons incidents. They were shot in Alberta, mostly in the Rocky Mountains.

The immediate benefit of this project was to supply a standardized training package that can be used nationally to train RCMP and volunteer organizations in effective search management. The package makes searches more organized and more effective, particularly in their early stages.

To date, there are over one hundred and ten kits, in both French and English, circulating in Canada. Requests for information about the kits are being made every day. The kits have been quite popular, and there seems to be much interest in them. These kits will be useful management tools for SAR for many years to come.

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New SAR Initiatives Fund
Final Summary Report

NIFID #: 95015
Project #: RCMP 6/95
Category: Volunteers

Integrated Search Management System

This project was sponsored by the Royal Canadian Mounted Police and received funding through the New SAR Initiatives Fund (NIF) in fiscal years 1995/96 and 1996/97.

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The training kit was produced by Spectra Communications Inc. of Vancouver. Videos were produced, mostly in the Alberta Rocky Mountains, that dramatized missing persons incidents.

The immediate benefit of this project was to have a standardized training kit that can be used nationally to train RCMP and volunteer organizations in effective search management. Better and standardized training should result in more organized and effective searches.

To date, there are over one hundred and ten kits, in both French and English, circulating in Canada. There have been many requests for the kits, which are useful training tools for SAR.

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New SAR Initiatives Fund
Final Summary Report

NIFID #: 96048
Project #: RCMP 1/96
Category: Prevention

SAR Prevention for Children

This project was sponsored by the Royal Canadian Mounted Police, and received funding through the New SAR Initiatives Fund (NIF) in fiscal year 1996/97.

The Hug-A-Tree and Survive (Canada) education safety program for children was created and initiated in an attempt to: prevent children from getting lost in the woods; *and* teach lost children the skills required to survive in the woods until they are rescued. The RCMP's main objective was to create a Canadian version of the highly regarded American program, and successfully distribute the program to qualified people to present the program.

The benefits of the Hug-A-Tree and Survive program will be fully realized when a single life of a lost young boy or girl is saved due to the knowledge and skills gained from the program. All children exposed to the program will greatly benefit by becoming "woods proofed". Feedback concerning this program has been very positive.

Bibliography reference:

Hug-A-Tree and Survive video
Hug-A-Tree and Survive Presenter's Manual
Hug-A-Tree and Survive colouring book
Hug-A-Tree and Survive handout for parents
Hug-A-Tree and Survive posters

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New SAR Initiatives Fund
Final Summary Report

NIFID #: 96051
Project #: RCMP 4/96
Category: Volunteers

Ground SAR Teams- PEI

This project was sponsored by the Royal Canadian Mounted Police, and received funding through the New SAR Initiatives Fund (NIF) in fiscal year 1996/97.

The purpose of this project was to train Ground Search and Rescue Teams in Prince Edward Island. This consisted of the training of twenty two (22) Level One SAR people, and ten (10) Level Two SAR people. There now is a foundation for the creation and implementation of volunteer SAR teams in Prince Edward Island.

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New SAR Initiatives Fund
Final Summary Report

NIFID #: 96056
Project #: RCMP 9/96
Category: Volunteers

Gas Powered Generators

This project was sponsored by the Royal Canadian Mounted Police, and received funding through the New SAR Initiatives Fund (NIF) in fiscal year 1996/97.

The purpose of this project was to enhance the capability of twenty one (21) ground SAR teams in Newfoundland and Labrador by equipping them with gas-powered 5,000 Watt generators. Each generator had two sets of 500 Watt lighting systems mounted on tripods, which provide light, heat, and electrical power for search teams operating in remote areas.

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The New SAR Initiatives Fund
Final Summary Report

NIFID #: 96055
Project #: RCMP 8/96
Category: Prevention

Land SAR System in Canada: Roles, Responsibilities, and Organization

This project was sponsored by Solicitor General, and received funding through the New SAR Initiatives Fund (NIF) in fiscal year 1996/97.

The objective of this project was to produce a video on the roles, responsibilities, and organization of Ground SAR in Canada, to be used as a tool for promoting community support for ground search and rescue activities, and for encouraging potential volunteers to become involved.

"Operation Ground Search" describes ground search and rescue in Canada, the command structure, and actions that are typical of a SAR operation.

Overall, the video has been received well by all those in SAR and in the community.

Bibliography References

- Operation Ground Search: An Introduction to Ground Search and Rescue Services in Canada

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New SAR Initiatives Fund
Final Summary Report

NIFID #: 96060
Project #: RCMP 10/96
Category: Response

Mobile Satellite Communications

This project was sponsored by The Royal Canadian Mounted Police, and received funding through the New SAR Initiatives Fund (NIF) in fiscal year 1996/97.

The purpose of this project was to enhance the computer and communication technology available to the RCMP and the Volunteer SAR teams in Manitoba. The equipment acquired through this project allows for communication between search teams anywhere in the province and coordinates all search and rescue information centrally on computer databases.

The equipment that was acquired, and their purposes are:

- A laptop computer that allows the SAR teams to use the most current software to assist them in ground searches, including mapping and search management functions.
- Two satellite cellular phones that can be used for communication at any remote location within the province, where no other method of outside communication is available.
- Portable radios allow for constant communication between ground search teams (both RCMP and Volunteer), command post and CASARA.

This project has helped to provided communication needs that enhance the search and rescue of lost or injured persons.

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Transport Canada

New SAR Initiatives Program
Final Summary Report

NIFID #: 96057
Project #: TCA 1/96
Category: Prevention

Sky High, Through the Overcast

This project was sponsored by Transport Canada and received funding through the New SAR Initiatives Fund (NIF) in fiscal year 1996/97.

The project produced 13 four-minute safety promotion segments to be televised on The Sports Network (TSN) and Le Réseau des sports (RSN) that address Search and Rescue topics. The segments promoted fundamental aviation accident prevention practices among pilots, maintainers, managers and passengers.

The television production provided direct benefit for the reduction of SAR by highlighting major problem areas such as: loss of control, controlled flight into terrain (CFIT), poor flight planning, poor management, poor pilot decision making, seaplane operation, post-accident survival, lack of understanding of weather, ELTs and GPS navigation.

TSN reaches 6.1 million households in Canada. RDS is available to 2.1 million French-speaking households in British Columbia, Ontario, Quebec and New Brunswick. *Sky High* and *Through the Overcast* was aired on TSN/RDS three times a week for 13 weeks starting April 24, 1997. Final evaluation of this project will be based on the reaction of the audience when the program airs on television. On completion of the initial broadcast of the series, copies of 'Through the Overcast' will be made available to the Transport Canada Regional Aviation Safety Officers and to the Civil Air Search and Rescue Association for use in their aviation safety promotion activities.

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Conclusion

The New SAR Initiatives Fund, as a whole, has linked together many groups of people including: the Federal Government, the Provincial/Territorial Government, Non-Federal organizations, Volunteers, and Others, in an effort to increase SAR capabilities in Canada.

During the fiscal year of 1996/97, many Research and Development, Prevention, Volunteer, and Response projects were funded. The projects ranged from large to small, and from single to multi year, but all of them have contributed to improving the search and rescue capabilities in Canada. The NSS receives many proposals, and funds those of the highest priority. Unfortunately, funds are not available to finance all of the proposals received. The National Search and Rescue Secretariat welcomes re-submission of worthy projects which did not receive funding and new ideas on future proposals.

The National Search and Rescue Secretariat would like thank those who have participated in the program. NIF has had many successes in the past and we trust that, with your help, it will continue to do so in the future, so '*that others may live*'.